

Remarks

Applicants thank the Examiner for his careful consideration of this application.

Reconsideration of this application is now respectfully requested in view of the amendments above and the following remarks.

Claims 1-5, 8-14, 26, 27, 29-33, and 38-40 are now pending in the application, with Claims 1, 9, 26, 35, and 38 being the independent claims. Claims 7, 28, 35, 36, and 41 have been cancelled without prejudice to pursue their subject matter subsequently. Claims 1, 2, 5, 8, 9, 14, 26, 30, 31, 33, and 38-40 have been amended.

Applicants gratefully acknowledge the indication of allowance of Claims 9-13 at Page 9 of the Office Action. Claim 9 has been amended to slightly increase its scope by means of a wording change. It is, nonetheless, respectfully submitted that Claims 9-13 remain in condition for allowance, as they still contain the subject matter previously indicated as being allowable.

At Pages 2-3, the Office Action rejects Claims 26-29, 31, and 33 under 35 U.S.C. § 102(e) as being anticipated by Iwata et al. (U.S. Patent No. 6,876,055). The rejection of Claim 28 is now moot, given its cancellation. Applicants respectfully traverse the remaining rejections for at least the following reasons.

As discussed above, Claim 28 has been cancelled. Claim 26 has been amended to incorporate the subject matter of Claim 28, i.e., "a second transistor disposed in the material, wherein the second transistor is on a same side of the resistance region as the body contact

region." Applicants respectfully submit that, for the following reasons, Iwata et al. fails to teach or suggest at least this limitation.

The Office Action cites Figure 17 of Iwata et al. as disclosing all of the claimed features, including the above-mentioned feature. However, a careful examination of Figure 17 reveals that this is not the case, particularly when viewed in light of its discussion at col. 2, lines 4 ff. (it is noted that the references given in the rejection refer to Figure 10, which has a different structure from Figure 17, and thus do not describe the features to which the Office Action refers in Figure 17; further more, it is respectfully submitted that Figure 10 also does not teach or suggest the claimed invention). Transistor 328 is formed in an n-type shallow well region 314 formed directly on a p-type deep well 313. Transistor 325, cited in the rejection as being the second transistor, is formed in an n-type shallow well region 314 formed directly on an n-type deep well region 312. Therefore, Figure 17 is inconsistent with the amended claim language for the following reasons: (1) the material is claimed as being formed *directly* on a semiconductor substrate; (2) the material and the substrate must have the same conductivity type (n or p); and (3) both transistors (and the body contact) must all be formed in the material. As a result of the above observations regarding the structure shown in Figure 17, Applicants cannot find any way to interpret Figure 17 so as to meet all three of these limitations simultaneously.

For at least these reasons, it is respectfully submitted that Claims 26-33 are allowable over the cited prior art.

At Pages 4-6, the Office Action rejects Claims 1-5, 8, 38, and 39 under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. in view of Wakamiya et al. (U.S. Patent No.

3,871,007). At Page 7, the Office Action rejects Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. and Wakamiya et al. in view of Yamaguchi et al. (U.S. Patent No. 6,867,106). The rejection of Claim 7 is now moot in view of the cancellation of Claim 7.

Applicants respectfully traverse the rejections of Claims 1-5 and 8 for at least the following reasons.

In the above amendments, Claim 1 has been amended to include a limitation of "a discrete capacitor coupled between a body and a source of the first transistor." The Office Action, at Page 7, relies on Yamaguchi et al., at Figure 3 and col. 8, lines 21-26, to teach this limitation. However, careful examination of the cited portion of Yamaguchi et al. reveals two reasons why the limitation is not taught or suggested therein: (1) the capacitance is shown as being coupled between a body and a *gate* of a transistor (not between a body and a source); and (2) the capacitance is discussed as not being a discrete capacitor, but rather as representing *parasitic* capacitance of the transistor.

For at least these reasons, therefore, it is respectfully submitted that Claims 1-5 and 8 are allowable over the cited prior art.

The rejections of Claims 38 and 39 are also traversed for the at least the following reasons. Claim 38 has been amended to recite that "the resistance region comprises the same material as said material but has a non-zero impurity concentration lower than an impurity concentration of the material." (It is also noted that Claim 38 has been amended to reverse the order of the last two limitations, to make the wording clearer.) In the rejections of these claims, the portions of the cited references that are pointed out refer to regions formed of an oxide or of

polycrystalline silicon in a semiconductor layer. In contrast, the claimed resistance region is formed of the same material as the rest of the device (e.g., a semiconductor layer), but with a different doping level from other portions of the material.

For at least these reasons, it is respectfully submitted that Claims 38 and 39 are allowable over the cited prior art.

The Office Action also contains additional rejections. In particular, at Page 6, Claim 32 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. in view of Yamaguchi et al. At Page 7, Claims 30, 35, and 36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. in view of Wong et al. (U.S. Patent No. 6,246,094). At Page 8, Claim 41 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. and Wong et al., further in view of Wakamiya et al. Finally, also at Page 8, Claims 14 and 40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwata et al. and Wakamiya et al. in view of Wong et al.

With regard to these further rejections, it is noted that the rejections of Claims 35, 36, and 41 are moot in view of the cancellation of these claims. It is respectfully submitted that the other claims, Claims 14, 30, 32, and 40, are allowable for at least the same reasons for which the claims from which they depend are allowable, as discussed above. In particular, Claim 14 depends from allowable Claim 1; Claims 30 and 32 depend from allowable Claim 26; and Claim 40 depends from allowable Claim 38.

It is additionally noted that each of Claims 14, 30, and 40 recites that the claimed material is an epitaxial layer. The Office Action cites Wong et al. at Fig. 2D, layer 14, and col. 4, line 67

to col. 5, line 1 as teaching the use of such an epitaxial layer. However, the Office Action further recites that the motivation for using such an epitaxial layer is "for the purpose of preventing latch up in a CMOS integrated circuit," citing col. 1, lines 10-12. However, nowhere in Wong et al. is it taught that the use of an epitaxial layer is to prevent latch-up, nor is it true that the mere use of an epitaxial layer can prevent latch-up. The discussion at Page 10 of the Office Action, therefore, contains flawed logic. In particular, Wong et al. teaches in the cited portion at col. 1, lines 10-12 that "a buried shallow trench isolation structure" is used to prevent latch-up. Although, in the other cited portion of Wong et al., Fig. 2D and col. 4, line 67 to col. 5, line 1, there is mention of the presence of an epitaxial layer 10, *there is no connection made between these two features*. Consequently, the Office Action at Page 10 is, in essence, stating that because Wong et al. discusses avoiding latch-up and because Wong et al. discussed the use of an epitaxial layer, Wong et al. must be using an epitaxial layer to prevent latch-up, a conclusion that *is not logically (or otherwise) supported. In fact, at col. 4, lines 36 ff., it is discussed that the buried shallow trench isolation structure that is used to prevent latch-up is not an epitaxial layer*. Therefore, it is respectfully submitted that, as noted in Applicants' response to the previous Office Action, these rejections lack a motivation to combine the references and, therefore, do not constitute proper rejections of these claims.

Applicants: RIPPKE et al.
Appl. No. 10/727,552

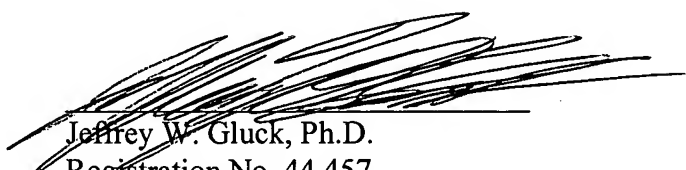
Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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